AMENDMENTS TO THE CLAIMS

1.   (Currently Amended) A test system, comprising:

    a)   a reference clock generator providing a reference clock;

    b)   a first instrument comprising

        i)   a first local clock generator coupled to the reference clock generator and providing a first local clock generated from the reference clock,

        ii)   a first control circuit storing programmed commands for ~~the plurality of instruments~~ the first instrument and a second instrument, and

    c)   [[a]]the second instrument comprising

        i)   a second local clock generator coupled to the reference clock generator and providing a second local clock generated from the reference clock;

        ii)   a second control circuit having an input and an output, the second control circuit asserting the output at a time specified by a time value provided at the input to the second control circuit;

        iii)   functional circuitry having a control input coupled to the output of the second control circuit, the functional circuitry executing a function in response to a value asserted at its control input; and

    d)   a network between at least the first instrument and the second instrument, the network carrying a message that includes [[a]]the time value, wherein the first control circuit is coupled to the network to provide the time value in the message and the second control circuit is coupled to the network to receive the time value at its input.

2. (Currently Amended)   The test system of claim 1 wherein:

    a)   the message carried by the network further includes an event code,

    b)   the first control circuit is coupled to the network to generate an event code associated with the time value,

c)   the second control circuit is coupled to the network to receive the event code

associated with the time value, and

d)   the second control circuit has an event output coupled to the

~~function~~functional circuitry, the event output having a value indicating the event

code at a time dictated by the time value associated with the event code.

3. (Original) The test system of claim 1 wherein the reference clock has a lower frequency

than the first local clock and the second local clock.

4. (Original) The test system of claim 1 additionally comprising a master control circuit

generating a synchronization signal provided to the first instrument, and wherein the first

local clock generator comprises circuitry to align the first local clock in response to the

synchronization signal.

5. (Original) The test system of claim 1 wherein the reference clock has a frequency of less

than 500 MHz and a local clock generator in at least one of the first and second local clocks

has a frequency in excess of 800 MHz.

6. (Original) The t est system of claim 1 wherein the network comprises a switching circuit

and a plurality of lines, each coupled between the switching circuit and an instrument.

7. (Original) The test system of claim 6 wherein the switching circuit comprises a router.

8. (Original) The test system of claim 6 wherein the message carried on the network

includes an address and the switching circuit additionally comprises an address table that

associates each of a plurality of addresses with one or more of the plurality of lines and

circuitry that provides the message on a line selectively in response to the value of an

address in the message and an entry in the address table.

9. (Original)   The test system of claim 8 wherein at least one of the plurality of addresses is associated with a plurality of lines.

10. (Original) The test system of claim 8 wherein at least one address is associated with all of the lines.

11. (Original) The test system of claim 1 wherein the first control circuit comprises a pattern generator.

12. (Original) The test system of claim 1 wherein

    a)   the first control circuit comprises a first time-tracking circuit, clocked by the first local clock; and

    b)   the second control circuit comprises a second time-tracking circuit clocked by the second local clock.

13. (Original) The test system of claim 1 wherein the first instrument comprises a digital instrument and the second instrument comprises an analog instrument.

14.-31. (Cancelled)

32. (New)   A test system, comprising:

    a reference clock generator providing a reference clock having a reference frequency to a plurality of instruments;

    a first instrument of the plurality of instruments;

    a second instrument of the plurality of instruments; and

    a network between at least the first instrument and the second instrument;

    wherein the first instrument comprises a first local clock generator coupled to the reference clock generator and providing a first local clock generated from the reference clock, the first local clock having a frequency higher than the reference frequency, and the

first instrument further comprising a first control circuit storing programmed commands for the first instrument and the second instrument, and the first instrument comprising a first time tracking circuit for tracking time based on the first local clock; and

wherein the second instrument comprises a second local clock generator coupled to the reference clock generator and providing a second local clock generated from the reference clock, the second local clock having a frequency higher than the reference frequency and the second instrument comprising a second time tracking circuit for tracking time based on the second local clock, and the second instrument further comprising a second control circuit having an input and an output, the second control circuit asserting the output at a time based at least in part on a comparison of a time value provided at the input to the second control circuit to a time tracked by the second time tracking circuit, the second instrument further comprising functional circuitry having a control input coupled to the output of the second control circuit, the functional circuitry executing a function in response to a value asserted at its control input; and

wherein the network carries a message that includes the time value; and

wherein the first control circuit is coupled to the network to provide the time value in the message based at least in part on a time tracked by the first time tracking circuit and the second control circuit is coupled to the network to receive the time value at its input.

33. (New)   A test system, comprising:

a)   a reference clock generator providing a reference clock having a plurality of periods;

b)   a first instrument comprising

    i)   a first local clock generator coupled to the reference clock generator and providing a first local clock generated from the reference clock,

    ii)   a first control circuit storing programmed commands for the first instrument and a second instrument, and

c)   a network between at least the first instrument and the second instrument, the
network carrying a message during a first period of the plurality of periods of
the reference clock, the message including a time value,

d)   the second instrument comprising

i)   a second local clock generator coupled to the reference clock
generator and providing a second local clock generated from the
reference clock;

ii)   a second control circuit having an input and an output, the second
control circuit asserting the output at a time specified by the time
value, wherein the time value specifies a time during a second period
of the reference clock;

iii)   functional circuitry having a control input coupled to the output of the
second control circuit, the functional circuitry executing a function in
response to a value asserted at its control input;

wherein the first control circuit is coupled to the network to provide the time
value in the message and the second control circuit is coupled to the network to
receive the time value at its input.

34. (New)   The test system of claim 35, wherein the first instrument is a
digital instrument.

35. (New)   The test system of claim 36, wherein the second instrument is
an analog instrument.